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ABSTRACT

This paper presents high-cost illness data from the first public use data file released on the 1977 National Medical Care Expenditure Survey. Characteristics of families which incurred out-of-pocket expenditures for personal health services that exceeded 5, 10, and 20 percent of their income in 1977 are described including: (1) demographics; (2) use of health care services; (3) total and out-of-pocket expenses, and (4) sources of payment. Findings are presented that depict families with a high ratio of out-of-pocket expenses to income as being more likely to be headed by someone under 18 or over 65 years of age, unemployed, and with lower income. Implications of the findings are examined, including the identification of two distinct types of families that have high out-of-pocket expenses: those for whom a high-cost illness resulted in high personal expenses in spite of good insurance coverage, and those for whom relatively small out-of-pocket expenses represented a high percentage of their income due to a combination of low income and inadequate health care coverage. The issue of catastrophic health care expense is addressed. The appendices describe the calculation and interpretation of relative errors and the method used to calculate the standard errors, the formation of confidence intervals, and the evaluation of differences among estimates. Two figures and 34 data tables are included. (NB)

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# FAMILIES WITH HIGH OUT-OF-POCKET HEALTH SERVICES EXPENDITURES RELATIVE TO THEIR INCOME

Final Report on Phase II of Contract
No. 233-81-3032
The National Center for
Health Services Research and
Health Care Technology Assessment

January 30, 1985

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## EXECUTIVE SUMMARY

The work reported here was carried out as part of a project on high-cost illness sponsored by the National Center for Health Services Research and Health Care Technology Assessment. It is based on data from the first public use data file released on the 1977 National Medical Care Expenditure Survey (NMCES).

The report describes the characteristics of families which incurred out-of-pocket expenditures for personal health services that exceeded 5.0, 10.0, and 20.0 percent of their incomes in 1977. Families with those levels of expense represent, respectively, 19.9, 9.6, and 4.3 percent of all families in the NMCES national sample of households, and they accounted for 41.9, 25.3, and 13.3, respectively, of total expenditures for all families.

Compared with all families, the families with a high ratio of out-of-pocket expenses to income were found more likely to be headed by someone under 18 or over 65 years of age, not employed, and with lower income. These families' total out-of-pocket expenses for inpatient care services were disproportionately large, and a smaller share of their health care expenses was covered by private health insurance and by Medicaid, while Medicare and the families themselves paid for a larger share.

The findings suggest that two distinct types of families have out-of-pocket expenses that are relatively high in relation to income: (1) families which, due to high-cost illness, incurred <u>total</u> health care bills so large that in spite of relatively good insurance coverage the uncovered portion paid out of pocket amounts to a considerable sum; these are the intended beneficiaries of most traditional stop-loss catastrophic health insurance proposals; and (2) families for whom relatively small out-of-pocket expenses represented a high percentage of their income due to a combination of low in-

come and inadequate or nonexistent health care coverage; these are the medically indigent whom programs such as Medicaid do not reach.

Any catastrophic health insurance program that uses as the criterion for eligibility the relation between out-of-pocket expenses and income is bound to capture, therefore, not only high-cost illness cases but also the medically indigent. The experience of at least one state catastrophic health insurance program is consistent with this prediction.

## 1.0 Introduction

This report focuses on families whose out-of-pocket expenditures for personal health services were high in relation to their income. It describes their demographic characteristics, use of health services, expenditures for those services, and type and extent of third-party coverage. It constitutes Phase II of a project on high-cost illness sponsored by the National Center for Health Services Research and Health Care Technology Assessment. Phase I of the project focused on the characteristics of persons who incurred high inpatient expenditures (see Berki et al., 1983). Phase II extends that work in two ways:

(1) Expenditures for all acute personal health services are included, whereas Phase I analyses were based on hospital discharge data and therefore dealt only with expenditures for inpatient care.

(2) By focusing on expenditures that are high relative to income, it deals with financially catastrophic expenditures in a strict sense; by contrast, in Phase I no data on income were available, and therefore only expenditures high in absolute terms were examined.

The data analyzed in this phase of the project were drawn from the first public use data file released from the 1977 National Medical Care Expenditure Survey (NMCES). For a detailed description of NMCES, see Bonham and Corder (1981); the description and documentation of the public use data file is found in Kasper et al.(1983).

This report extends the information from NMCES presented by Rossiter and Wilensky (1982) in Data Preview 13 from the National Health Care Expenditures Study, which describes the financial burden on individuals and families of out-of-pocket expenditures for health care in 1977. Data Preview 13 presents the distribution of families by intervals of out-of-pocket expense as a per-

cent of income. This report describes the characteristics of a subset of families in that distribution: those that incurred out-of-pocket expenditures exceeding 5.0, 10.0, and 20.0 percent of family income.

The three levels--5.0, 10.0, and 20.0 percent of income--were chosen to represent highly burdensome or financially catastrophic health care expenditures. The 5.0 percent level was chosen to correspond roughly to current Internal Revenue Service regulations, which provide that medical care expenses exceeding 5.0 percent of adjusted gross income are tax deductible. This legislatively imposed level is one tangible expression of what, in our society, represents the approximate point beyond which medical expenses exceed the amount that a family can reasonably be expected to have budgeted for. That, however, is not necessarily the point at which such expenses are deemed to be "catastrophic." In fact, there is no clear consensus on that issue, although the two other levels used in this report --10.0 and 20.0 percent of income--correspond to those most frequently included both in proposals and in plans for catastrophic health insurance (see, for example, CBO, 1977; Van Ellet, 1981; and Trapnell et al.,1983). Levels greater than 20.0 percent were not included primarily because the number of cases in the NMCES file that fall in those higher brackets is too small to provide reliable estimates of most characteristics on which this report focuses.

The specific family attributes described below are: (1) demographic characteristics (income; family size; and head of household's age, education, and employment); (2) volumes and types of health care services used; (3) total and out-of-pocket expenditures by type of service; and (4) extent of third party coverage for health care expenditures. The NMCES public use data file does not include information on diagnoses or medical conditions; therefore that aspect is not examined in this report.

All analyses were performed on weighted data in order to derive national estimates. The weight applied to each family in the sample is that of the family's head of household. Every estimate is accompanied by an estimate of its standard error, making it possible to consider the relative error of every estimate shown. The calculation and interpretation of relative errors are briefly described in Appendix I. More detailed information on this issue is provided in Appendix II, which describes the method used to calculate the standard errors, the formation of confidence intervals, and the evaluation of differences among estimates.

## 2.0 Demographic Characteristics

### 2.1 Size and Overall Characteristics of Sample

The NMCES public use data file provides data on a sample of 14,615 families. Of that total, 43 reported negative incomes and another 43 no income at all. Although the 86 families are included in all totals, obviously it was not possible to calculate the percent of their family income represented by out-of-pocket expenses for health services. Among the total 14,615 families, out-of-pocket expenses were found to represent less than 5.0 percent of income for 79.5 percent of them and more than 25.0 percent for 3.4 percent (Table 1.0). For 128 families out-of-pocket expenses represented more than 100.0 percent of income. In at least some of those 128 cases this is likely to be an artifact attributable to imputations or the result of how income or expenses were reported. In any event, the 128 families are included in all analyses.

As mentioned earlier, this analysis focuses on three groups of families, those with out-of-pocket expenditures for health services exceeding 5.0, 10.0, and 20.0 percent of income, respectively. The three groups are cummulative,

e.g., the "over 10.0 percent of income" group includes the "over 5.0 percent of income" group. Table 2.0 shows the number and percent of families in each group. Although the cost of health care increased more rapidly than incomes between 1977 and 1983, adjusting for the different rates of inflation does not alter substantially the percent of all families that would fall in the three categories in 1983 (Table 2.1). (The inflation-adjusted percentages for 1983 in Table 2.1 reflect a 75.4 percent increase between 1977 and 1983 in the medical care component of the Consumer Price Index, and a 63.7 percent increase in per capita disposable personal income).

## 2.2 Income

As might be expected, there is an inverse relationship between family income and percentage of that income represented by out-of-pocket health care expenses (Table 2.2). Consistent with that, lower income families are much more likely than other families to have a high ratio of out-of-pocket expenses to income (Table 2.3). The higher the expenses as a percent of income, the greater the proportion of families below the poverty level (Table 2.4 and Figure 1), where poverty level was determined based on household income adjusting for household size in accordance with U.S. Bureau of the Census guidelines (see Kasper et al., 1983). Conversely, families at or below the poverty line are two-and-a-half times as likely to have out-of-pocket expenses in excess of 5 percent of family income as families above the poverty level (Table 2.5 and Figure 2). For the over-10 and 20 percent of income categories, the disparity in likelihoods is even greater.

## 2.3 Family Size

It might be expected that, all else being equal, just as lower-income families are more likely to be over-represented among those with greater out-

Figure 1. Percent of Families Below Poverty Level, by Proportion of Income Represented by Out-of-Pocket Expenditures for Health Services. NMCES: United States, 1977

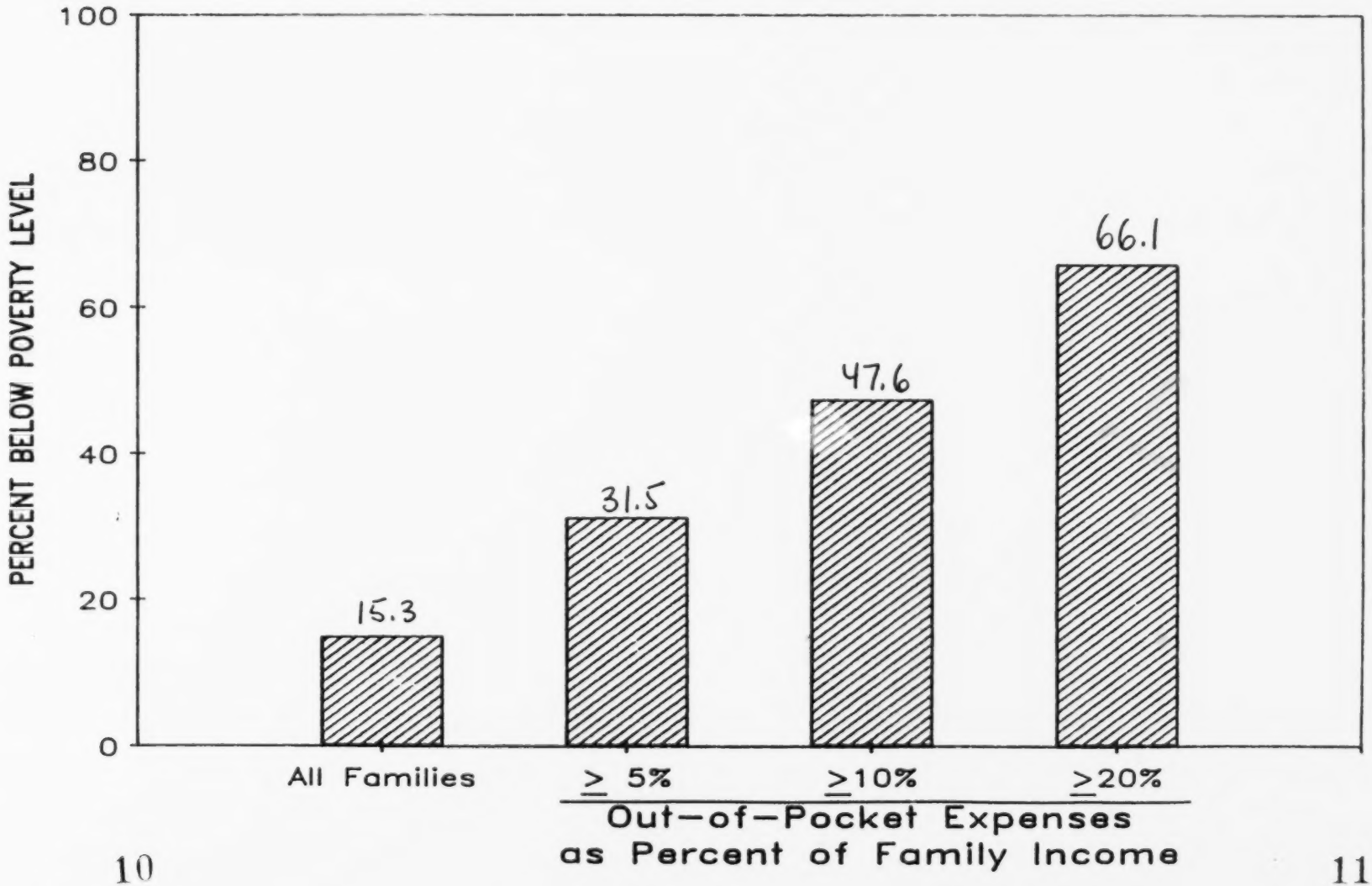
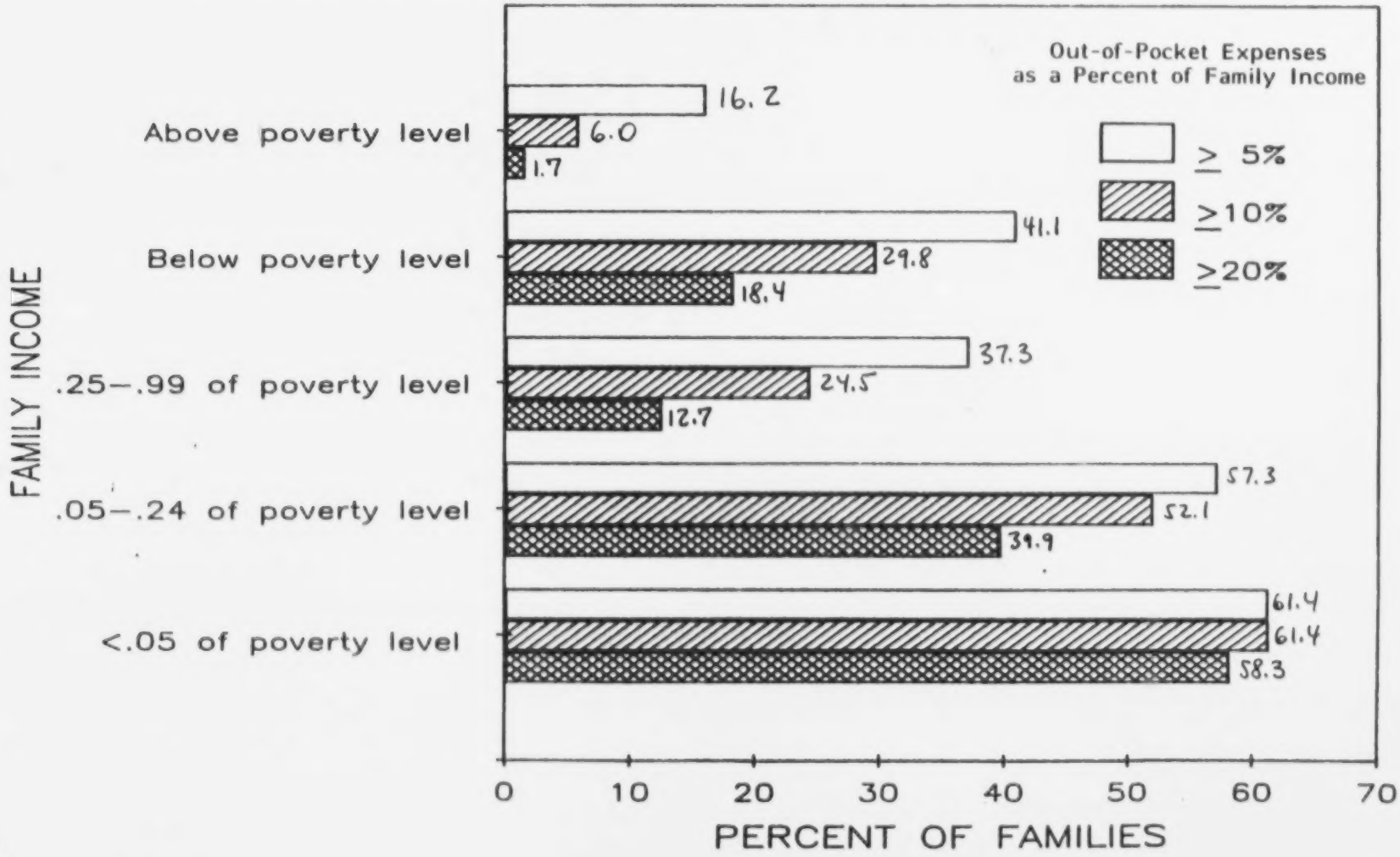


Figure 2. Percent Distribution of Families with Out-of-Pocket Expenditures for Health Services Exceeding 5.0, 10.0 and 20.0 Percent of Family Income, by Income Levels. NMCES: United States, 1977



of-pocket expenses relative to income, so larger families would also be over-represented in this group. In fact, the reverse appears to be the case (Table 2.6), and the proportion of one-person families is actually greater among families with disproportionately high out-of-pocket expenses (Table 2.7).

### 2.4 Characteristics of Head of Family

Certain characteristics of the head of family are associated with the family spending a high percentage of its income on health services: the heads of such families are more likely to be under 18 or over 65 (Table 2.8), and, consistent with that, are somewhat more likely to have fewer than 9 years of education (Table 2.9). They are also less likely to be employed all year (Table 2.10). The patterns for age and employment persist even when family size is taken into account (Tables 2.11 and 2.12), although in absolute terms families of two or more compared with one-person families are more likely to be headed by someone who is younger and employed. Overall, age greater than 65 and unemployment of family head are positively related to percentage of family income absorbed by out-of-pocket expenses.

## 3.0 Use of Services

As might also be expected, there is a positive relationship between level of use of services and percent of a family's income represented by out-of-pocket expenses. This relationship obtains not only at the family level (Table 3.0) but also when use per person is considered (Table 3.1). The pattern is most pronounced for in-patient services (admissions, days and hospital physician visits), and least noticeable for items not likely to be insured and considered to be discretionary, such as visits for eyeglasses or lenses and dental visits.

## 4.0 Expenses

Total health care expenses of families with high out-of-pocket health services expenses in relation to their income represent a disproportionate share of all health care expenditures (Table 4.0). For example, families with out-of-pocket expenses exceeding 20.0 percent of their income constituted 4.3 percent of all families yet accounted for 13.3 percent of total expenditures for health services. Consistent with that, in every category of service the mean total expenses of such families are substantially greater than those of all families, and the amounts increase with percentage of income represented by out-of-pocket expenses (Table 4.1).

By far the largest share of total expenses is for inpatient care categories, and that share increases with the ratio of income to out-of-pocket expenses (Table 4.2): expenses for all inpatient care services account for 65.6 percent of all expenses for families with 5 percent or more of income in out-of-pocket expenses in contrast to 73.5 percent for those with 20.0 percent or more (see Table 5.8).

While the amounts spent out of pocket are predictably higher among families in which such expenses are a high proportion of income (Table 4.3), small amounts account for a considerable proportion of families (Table 4.4): out-of-pocket expenses were under $500 in more than one-third of the families where such expenses represent 5.0 percent of income (Table 4.5). As might be expected, among families with high ratios of out-of-pocket expenses to income those above the poverty level had mean out-of-pocket expenses that were at least twice as large as families below the poverty level (Table 4.6).

The percent distribution of out-of-pocket expenses across services (Table 4.7) differs markedly from that for total expenses described earlier (see Table 4.2). All inpatient care services, though still a considerable share,

represent a smaller proportion of the total, whereas the percentage for ambulatory physician services, dental care, and prescribed medicines are all correspondingly larger. The single category that involves by far the largest total expenses, inpatient hospital services, is the one for which the three groups of families with proportionately high out-of-pocket expenses paid the smallest percentage of the total out-of-pocket amount, ranging from 16 to 25 percent, although it is still higher than the 8.7 percent for all families (Table 4.8). By contrast, those families paid for over half of the expense of ambulatory physician and nonphysician services, and for over 80 percent of the expense for dental services, eyeglasses and contact lenses, prescribed medicines and medical equipment and supplies.

5.0 Source of Payment

When mean amounts paid for each category of service are examined by source of payment, it is clear once again that the amounts paid by families with health service expenses exceeding 5.0, 10.0 and 20.0 percent of income are greater than those paid by all families, particularly so for all inpatient care services (Tables 5.0 through 5.3). Further, those ever greater mean amounts represent an increasing percent of the total bill (Tables 5.4 through 5.7). This compensates for private insurance and Medicaid, both of which contribute a smaller share as the out-of-pocket amounts increase in relation to income. By contrast, the share paid by Medicare increases, not only for inpatient care services, but for other services as well, most notably ambulatory physician and nonphysician services. The "unknown" payor category also tends to increase with the ratio of out-of-pocket expenses to income, possibly reflecting increases in unpaid bills. "Other payors"--which include federal sources such as the military, the Veterans Administration and the Indian Health Service, and state, county and city payors, as well as private sources

such as philanthropy and union clinics--also provide an increasing share of the funds for families with high out-of-pocket expenses relative to income, but that share remains quite small, never exceeding 9.0 percent for any one category of service, or 4.0 percent of all expenses.

Extent of coverage is further illuminated by examining expenses for all inpatient services (hospital, inpatient physician, and other inpatient services). Inpatient care so defined represents a larger share of total and out-of-pocket expenses for families with out-of-pocket expenses exceeding 5.0, 10.0, and 20.0 percent of family income than for all families, and the proportions are directly related to the ratio of out-of-pocket expenses to income (Table 5.8). One obvious implication is that relative to all families, families with disproportionately high out-of-pocket expenses tend to have more inadequate coverage for inpatient care services, even though that is the area for which coverage has been most widespread and comprehensive.

## 6.0 Some Implications of the Findings

This section examines briefly some of the implications of the findings described above and identifies further investigations which the findings suggest but which could not be carried out within the limited scope of this effort.

### 6.1 Shielding Families from the Financial Burden of High Health Care Expenses

Most catastrophic health insurance proposals are designed to benefit families with out-of-pocket health services expenses that are high relative to their income. The proposals assume that the total health services expenses of such families were so high that the deductibles, copayments and items not covered by their health insurance add up to a considerable sum. The findings from this analysis of the NMCES data suggest that this is only one possible

scenario, and that a more complex interaction between total expenses, insurance coverage, and income level results in out-of-pocket expenses which are high in relation to income.

In particular, the findings point to two groups of families which qualify as having a high ratio of out-of-pocket expenses to income, even though in absolute terms their out-of-pocket expenses may not be excessively large:

1) Those with low incomes: 66 percent of families with out-of-pocket expanses greater than 20 percent of income were families below the poverty line (see Figure 1).

2) Those with inadequate or nonexistent health care coverage. One interpretation of the findings described in Section 5.0 is that families with out-of-pocket expenses greater than 20 percent of income include a large number of families with no private insurance or with very inadequate coverage, and with no Medicaid, which would account for the relatively lower proportion of the total bills paid by those two sources.

Obviously, the two groups are not mutually exclusive, and in fact those with no insurance and low incomes are the ones most likely to be included in any grouping of families with high ratios of out-of-pocket expenses to income.

Therefore, any effort to protect all families against incurring out-of-pocket expenses that are high in relation to income must go beyond protecting against high-cost illnesses that lead to relatively high out-of-pocket expenses. It must also provide protection for low-income families with relatively small expenditures and little or no health care coverage. That, in fact, was the early experience of Maine's catastrophic health insurance program. When the eligibility standards of that program focused strictly on the relation of out-of-pocket expenses to income, a substantial portion of those qualifying

for the program were found to be low income persons with relatively small health care expenses (Deprez, 1983).

In view of that, it would be useful to refine the analyses presented here to separate families with a high ratio of out-of-pocket expenses to income into two groups: (1) families with high out-of-pocket expenses because of total bills so high that, in spite of relatively good insurance coverage, the uncovered portion amounted to a considerable sum; these are the people who traditionally have been the intended beneficiaries of stop-loss catastrophic insurance; and (2) those whose relatively small expenses represent a high percentage of their income because their income is low and their health insurance is inadequate or nonexistent; this group represents medically indigent families whom programs such as Medicaid are not reaching at all or not sufficiently. More exact estimates of the relative size of these two groups would help clarify some of the policy debates over catastrophic health insurance. To derive such estimates would require defining what constitutes a "catastrophic" out-of-pocket expenditure. As discussed in the next subsection, that is not readily accomplished. Obtaining reliable estimates would also require determining the validity of reported family incomes that are very low, which is not possible with the data available from the first NMCES public use tape.

### 6.2 Defining Catastrophic Health Care Expense

As the discussion in the preceding section suggests, a useful distinction might be made in the definition of catastrophic health care expenses between (a) health services expenditures that are so high in absolute terms that they result in out-of-pocket expenses that are burdensome to families; these are the type of expenses that catastrophic health insurance proposals are typically aimed at; and (b) relatively low expenditures which are nevertheless finan-

cially burdensome to families because of low income and lack of adequate health care coverage.

A related, but separate issue is determining at what point "financially burdensome" becomes "catastrophic." The results from this analysis do not offer clear guidance on this point. As the percent of income represented by out-of-pocket expenses increases, many characteristics of the families do become more accentuated, e.g., lower income, older head of household, higher percent of expenses devoted to inpatient care. But that in itself does not indicate whether 5.0 or 20.0 or 30.0 percent of income is the appropriate level. Ultimately, it may be necessary to determine, for different income levels, at what point out-of-pocket health care expenses exceed what might reasonably be expected to constitute a budgetable amount for health care. Such calculations are notoriously difficult to carry out, controversial, and in the end may lead back to some more-or-less arbitrary multiple of the 5.0 percent of disposable income currently used by the Internal Revenue Service.

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Table 1.0

Number and Percent Distribution of Families by Intervals of Annual Out-of-Pocket Expense for Health Services as a Percent of Family Income. NMCES Household Data, 1977.

| Out-of-Pocket Expenses as Percent of Family Income | Families | | |
|---|---|---|---|
| | Sample Size | Number of Families | Percent Distribution (Standard Error) |
| 0.0 to 4.9 | 11,598 | 62,286,966 | 79.5 (0.45) |
| 5.0 to 9.9 | 1,523 | 8,086,537 | 10.3 (0.30) |
| 10.0 to 14.9 | 540 | 2,871,526 | 3.7 (0.18) |
| 15.0 to 19.9 | 244 | 1,311,702 | 1.7 (0.14) |
| 20.0 to 24.9 | 122 | 653,245 | 0.8 (0.08) |
| 25.0 or more | 502 | 2,677,638 | 3.4 (0.19) |
| Unknown* | 86 | 472,450 | 0.6 (0.07) |
| Total | 14,615 | 78,360,064 | 100.0 |

*These represent families with zero or negative net incomes.

Table 2.0

Number and Percent of All Families with Out-of-Pocket Health Services Expenditures Exceeding 5.0, 10.0, and 20.0 Percent of Family Income. NMCES Household Data, 1977.

| Out-of-Pocket Expenses as Percent of Family Income | Sample Size | Number of Families | Percent of All Families in the Category (Standard Error) |
|---|---|---|---|
| 5.0 or more | 2,931 | 15,600,648 | 19.9 (0.45) |
| 10.0 or more | 1,408 | 7,514,111 | 9.6 (0.31) |
| 20.0 or more | 624 | 3,330,883 | 4.3 (0.20) |

Table 2.1

Families with Out-of-Pocket Health Services Expenses Exceeding 5.0, 10.0, and 20.0 Percent of Family Income, Percent Based on Actual 1977 Data and Reflecting Adjustments for Inflation in Costs and Income for 1983. NMCES Household Data, 1977.

| Out-of-Pocket Expenses as Percent of Family Income | Percent of All Families in the Category (Standard Error) | |
|---|---|---|
| | Actual 1977 Data | Adjusted for Inflation to 1983 |
| 5.0 or more | 19.9 (0.45) | 20.8 (0.44) |
| 10.0 or more | 9.6 (0.31) | 10.0 (0.31) |
| 20.0 or more | 4.3 (0.20) | 4.4 (0.20) |

Table 2.2

Percent Distribution by Income of All Families and Families with Out-of-Pocket Expenses for Health Services Exceeding 5.0, 10.0, and 20.0 Percent of Family Income. NMCES Household Data, 1977.

| Income Categories | Percent Distribution (Standard Error) | | | |
|---|---|---|---|---|
| | All Families | Families with Out-of-Pocket Expense Exceeding Specified Percentage of Family Income | | |
| | | 5.0 Percent or More | 10.0 Percent or More | 20.0 Percent or More |
| Less than $12,000 | 46.1 (0.77) | 73.4 (0.98) | 86.2 (1.02) | 93.9 (1.14) |
| $12,000 to $19,999 | 24.0 (0.45) | 18.4 (0.76) | 10.9 (0.91) | 5.1 (0.97) |
| $20,000 or more | 29.9 (0.70) | 8.2 (0.57) | 2.9 (0.46) | 1.0 (0.52) |
| All income categories | 100.0 | 100.0 | 100.0 | 100.0 |

Table 2.3

Percent of Families in Specified Income Categories Incurring Out-of-Pocket Expenses for Health Services that Exceeded 5.0, 10.0 and 20.0 Percent of Family Income. NMCES Household Data, 1977.

| Out-of-Pocket Expense Incurred as a Percent of Family Income | Percent of Families (Standard Error) | | | |
|---|---|---|---|---|
| | Income Categories | | | |
| | Less than $12,000 | $12,000 to $19,999 | $20,000 or more | All Income Categories |
| 5.0 or more | 31.7 (0.75) | 15.3 (0.74) | 5.4 (0.36) | 19.9 (0.45) |
| 10.0 or more | 17.9 (0.54) | 4.4 (0.39) | 0.9 (0.15) | 9.6 (0.31) |
| 20.0 or more | 8.7 (0.40) | 0.9 (0.18) | 0.1 (0.08) | 4.3 (0.20) |

Table 2.4

Percent of Families below Poverty Level, by Proportion of Income Represented by Out-of-Pocket Expenses. NMCES Household Data, 1977.

| | All Families | Families with Out-of-Pocket Expense Exceeding Specified Percentage of Family Income | | |
|---|---|---|---|---|
| | | 5.0 Percent or More | 10.0 Percent or More | 20.0 Percent or More |
| Percent below Poverty Level | 15.3 | 31.5 | 47.5 | 66.1 |
| (Standard Error) | (0.45) | (0.89) | (1.44) | (2.18) |

Table 2.5

Percent of Families Above and Below the Poverty Level Incurring Out-of-Pocket Expenses for Health Services that Exceeded 5.0, 10.0, and 20.0 Percent of Family Income. NMCES Household Data, 1977.

| Out-of-Pocket Expense Incurred as a Percent of Family Income | Percent of Families (Standard Error) | | | | |
|---|---|---|---|---|---|
| | Above Poverty Level | Below Poverty Level | | | |
| | | All Families Below Level | .25 – .99 of Level | .05 – .24 of Level | <.05 of Level |
| 5.0 or more | 16.2 (0.44) | 41.0 (1.20) | 37.3 (1.30) | 57.3 (3.27) | 61.4 (5.26) |
| 10.0 or more | 6.0 (0.25) | 29.8 (1.18) | 24.5 (1.27) | 52.1 (2.96) | 61.4 (5.26) |
| 20.0 or more | 1.7 (0.14) | 18.4 (1.00) | 12.7 (1.02) | 39.9 (2.87) | 58.3 (5.38) |

Table 2.6

Mean Number of Persons in All Families and Families with Out-of-Pocket Health Services Expenditures Exceeding 5.0, 10.0, and 20.0 Percent of Family Income. NMCES Household Data, 1977.

| Out-of-Pocket Expenditures as Percent of Family Income | Number of Families | Number of Persons in Family | | | |
|---|---|---|---|---|---|
| | | Mean | Std. Error | Minimum | Maximum |
| 5.0 or more | 15,600,648 | 2.59 | .037 | 1 | 14 |
| 10.0 or more | 7,514,111 | 2.42 | .047 | 1 | 12 |
| 20.0 or more | 3,330,883 | 2.32 | .058 | 1 | 10 |
| All Families | 78,360,064 | 2.76 | .023 | 1 | 21 |

Table 2.7

Number and Percent Distribution of Families, by Size of Family
and Level of Out-of-Pocket Expenditures in Relation to Family Income. NMCES Household Data, 1977.

| Size of Family | Number and Percent Distribution (Standard Error) | | | |
|---|---|---|---|---|
| | All Families | Families with Out-of-Pocket Expense Exceeding Specified Percentage of Family Income | | |
| | | 5.0 Percent or More | 10.0 Percent or More | 20.0 Percent or More |
| 1 Person | 20,507,098<br>26.2<br>(0.59) | 4,785,935<br>30.7<br>(1.04) | 2,644,124<br>35.2<br>(1.64) | 1,294,516<br>38.9<br>(2.06) |
| 2 or More Persons | 57,852,966<br>73.8<br>(0.59) | 10,814,713<br>69.3<br>(1.04) | 4,869,987<br>64.8<br>(1.64) | 2,036,367<br>61.1<br>(2.06) |
| All Families | 78,360,064<br>100.0 | 15,600,648<br>100.0 | 7,514,111<br>100.0 | 3,330,883<br>100.0 |

Table 2.8

Age of Family Head in All Families and Families with Out-of-Pocket Health Services Expense Exceeding 5.0, 10.0, and 20.0 Percent of Family Income. NMCES Household Data, 1977.

| Age of Family Head in Years | Percent Distribution (Standard Error) | | | |
|---|---|---|---|---|
| | All Families | Families with Out-of-Pocket Expense Exceeding Specified Percentage of Family Income | | |
| | | 5.0 Percent or More | 10.0 Percent or More | 20.0 Percent or More |
| 18 or less | 0.5 (0.06) | 1.0 (0.21) | 1.6 (0.37) | 2.7 (0.82) |
| 19 to 24 | 10.1 (0.32) | 10.1 (0.59) | 12.1 (0.85) | 12.1 (1.23) |
| 25 to 34 | 21.8 (0.59) | 16.8 (0.76) | 14.2 (0.99) | 14.1 (1.41) |
| 35 to 44 | 16.2 (0.39) | 13.5 (0.71) | 12.3 (0.96) | 11.3 (1.22) |
| 45 to 54 | 16.8 (0.39) | 11.6 (0.61) | 11.6 (0.98) | 13.0 (1.44) |
| 55 to 64 | 15.3 (0.34) | 14.6 (0.70) | 15.5 (1.14) | 15.0 (1.70) |
| 65 to 74 | 11.7 (0.38) | 17.9 (0.74) | 17.3 (1.13) | 14.7 (1.56) |
| 75 or older | 7.6 (0.31) | 14.5 (0.84) | 15.4 (1.14) | 17.1 (1.54) |
| All | 100.0 | 100.0 | 100.0 | 100.0 |

Table 2.9

Education of Family Head in All Families and Families with Out-of-Pocket Health Services Expense Exceeding 5.0, 10.0, and 20.0 Percent of Family Income. NMCES Household Data, 1977.

| Years of Schooling of Family Head | Percent Distribution (Standard Error) | | | |
|---|---|---|---|---|
| | All Families | Families with Out-of-Pocket Expense Exceeding Specified Percentage of Family Income | | |
| | | 5.0 Percent or More | 10.0 Percent or More | 20.0 Percent or More |
| Less than 9 years | 20.8 (0.77) | 26.8 (1.30) | 27.0 (1.64) | 25.3 (2.16) |
| 9 to 11 years | 16.8 (0.40) | 19.0 (0.97) | 22.0 (1.26) | 23.6 (1.98) |
| 12 years | 32.1 (0.56) | 28.2 (0.90) | 26.2 (1.16) | 25.3 (1.64) |
| 13 to 15 years | 14.6 (0.43) | 14.0 (0.81) | 13.7 (1.11) | 14.3 (1.80) |
| 16 or more years | 15.7 (0.62) | 12.0 (0.78) | 11.1 (1.08) | 11.5 (1.66) |
| All | 100.0 | 100.0 | 100.0 | 100.0 |
| Total Number in Category | 78,360,065 | 15,600,648 | 7,514,111 | 3,330,883 |
| Missing Cases, not Included in Percent Distribution | 3,065,395 | 630,245 | 411,208 | 241,567 |

Table 2.10
Employment Status of Family Head in All Families and Families with Out-of-Pocket Health Services Expense Exceeding 5.0, 10.0, and 20.0 Percent of Family Income. NMCES Household Data, 1977.

| Employment Status of Family Head | Percent Distribution (Standard Error) | | | |
|---|---|---|---|---|
| | All Families | Families with Out-of-Pocket Expense Exceeding Specified Percentage of Family Income | | |
| | | 5.0 Percent or More | 10.0 Percent or More | 20.0 Percent or More |
| Employed all year | 64.9 (0.63) | 46.9 (1.17) | 38.9 (1.43) | 31.3 (2.04) |
| Employed part of the year | 9.4 (0.28) | 12.1 (0.75) | 13.1 (1.12) | 13.8 (1.60) |
| Unemployed all year | 22.4 (0.61) | 35.3 (1.20) | 42.4 (1.53) | 50.6 (2.14) |
| Unknown | 3.3 (0.19) | 5.7 (0.47) | 5.6 (0.67) | 4.3 (0.88) |
| All | 100.0 | 100.0 | 100.0 | 100.0 |

Table 2.11

Age of Family Head in All Families and Families with Out-of-Pocket Health Services Expense Exceeding 5.0, 10.0, and 20.0 Percent of Family Income, by Size of Family. NMCES Household Data, 1977.

| Age of Family Head in Years | Percent Distribution (Standard Error) | | | |
|---|---|---|---|---|
| | All Families | Families with Out-of-Pocket Expense Exceeding Specified Percentage of Family Income | | |
| | | 5.0 Percent or More | 10.0 Percent or More | 20.0 Percent or More |
| <u>One Person Families</u> | | | | |
| ≤ 18 | 1.3 (0.19) | 2.1 (0.54) | 2.7 (0.81) | 4.5 (1.53) |
| 19-24 | 21.3 (0.92) | 20.5 (1.57) | 22.5 (1.85) | 21.8 (2.54) |
| 25-34 | 17.3 (1.10) | 9.2 (1.19) | 8.0 (1.33) | 8.8 (2.13) |
| 35-44 | 6.3 (0.51) | 3.5 (0.88) | 3.7 (1.14) | 3.2 (1.39) |
| 45-54 | 8.0 (0.45) | 4.5 (0.77) | 4.4 (1.00) | 4.8 (1.59) |
| 55-64 | 13.2 (0.68) | 13.1 (1.23) | 14.4 (1.52) | 14.9 (2.39) |
| 65-74 | 17.8 (0.81) | 22.6 (1.55) | 20.2 (1.75) | 17.0 (2.61) |
| ≥ 75 | 14.8 (0.70) | 24.7 (1.78) | 24.2 (2.22) | 25.1 (2.75) |
| All Families | 100 0 | 100.0 | 100.0 | 100.0 |

Table 2.11 (continued)

| Age of Family Head in Years | Percent Distribution (Standard Error) | | | |
|---|---|---|---|---|
| | All Families | Families with Out-of-Pocket Expense Exceeding Specified Percentage of Family Income | | |
| | | 5.0 Percent or More | 10.0 Percent or More | 20.0 Percent or More |
| Two or More Persons in Family | | | | |
| ≤18 | 0.2 (0.05) | 0.5 (0.18) | 1.0 (0.37) | 1.6 (0.78) |
| 19-24 | 6.1 (0.27) | 5.5 (0.52) | 6.4 (0.89) | 5.8 (1.31) |
| 25-34 | 23.5 (0.54) | 20.1 (0.90) | 17.5 (1.42) | 17.4 (2.10) |
| 35-44 | 19.7 (0.45) | 17.9 (0.90) | 17.0 (1.34) | 16.4 (1.94) |
| 45-54 | 19.9 (0.48) | 14.7 (0.70) | 15.5 (1.20) | 18.3 (2.16) |
| 55-64 | 16.1 (0.41) | 15.3 (0.80) | 16.1 (1.42) | 15.1 (2.13) |
| 65-74 | 9.5 (0.36) | 15.8 (0.87) | 15.8 (1.34) | 13.3 (1.96) |
| ≥ 75 | 5.0 (0.27) | 10.1 (0.78) | 10.7 (1.21) | 12.1 (1.78) |
| All Families | 100.0 | 100.0 | 100.0 | 100.0 |

Table 2.12

Employment Status of Family Head in All Families with Out-of-Pocket Health Services Expense Exceeding 5.0, 10.0, and 20.0 Percent of Family Income. NMCES Household Data, 1977.

| Employment Status of Family Head | Percent Distribution (Standard Error) | | | |
|---|---|---|---|---|
| | All Families | Families with Out-of-Pocket Expense Exceeding Specified Percentage of Family Income | | |
| | | 5.0 Percent or More | 10.0 Percent or More | 20.0 Percent or More |
| **One Person Families** | | | | |
| Employed All year | 49.0 (1.29) | 29.8 (1.95) | 24.1 (2.21) | 22.3 (3.18) |
| Employed Part of the Year | 13.7 (0.74) | 18.3 (1.53) | 21.1 (2.23) | 20.4 (3.47) |
| Unemployed All Year | 33.0 (1.20) | 44.3 (2.05) | 48.4 (2.31) | 53.7 (3.29) |
| Unknown | 4.2 (0.43) | 7.6 (0.98) | 6.4 (1.26) | 3.6 (1.44) |
| All Families | 100.0 | 100.0 | 100.0 | 100.0 |
| **Two Person Families** | | | | |
| Employed All Year | 70.5 (0.68) | 54.5 (1.46) | 46.9 (1.79) | 37.0 (2.57) |
| Employed Part of the Year | 7.9 (0.32) | 9.3 (0.82) | 8.8 (1.01) | 9.7 (1.53) |
| Unemployed All Year | 18.7 (0.57) | 31.4 (1.42) | 39.1 (1.94) | 48.7 (2.81) |
| Unknown | 2.9 (0.18) | 4.8 (0.45) | 5.2 (0.74) | 4.7 (1.09) |
| All Families | 100.0 | 100.0 | 100.0 | 100.0 |

Table 3.0

Mean Use of Health Care Services by All Families and Families with Out-of-Pocket Health Services Expense Exceeding 5.0, 10.0, and 20.0 Percent of Family Income. NMCES Household Data, 1977.

| Type of Service | Mean Number of Services Used (Standard Error) | | | |
|---|---|---|---|---|
| | All Families | Families with Out-of-Pocket Expense Exceeding Specified Percentage of Family Income | | |
| | | 5.0 Percent or More | 10.0 Percent or More | 20.0 Percent or More |
| Hospital Admissions | 0.40<br>(.009) | 0.85<br>(.028) | 1.02<br>(.044) | 1.15<br>(.077) |
| Hospital Days | 2.83<br>(.085) | 7.03<br>(.292) | 9.37<br>(.540) | 11.55<br>(1.013) |
| Ambulatory Physician Visits | 10.71<br>(.136) | 16.05<br>(.342) | 16.65<br>(.526) | 17.03<br>(.757) |
| Hospital Physician Visits | 0.68<br>(.017) | 1.49<br>(.053) | 1.83<br>(.090) | 2.11<br>(.149) |
| Dental Visits | 3.56<br>(.078) | 5.16<br>(.194) | 4.94<br>(.294) | 4.92<br>(.399) |
| Visits for Glasses or Lenses | 0.38<br>(.007) | 0.52<br>(.018) | 0.52<br>(.031) | 0.54<br>(.054) |
| Prescriptions | 11.59<br>(.259) | 19.73<br>(.619) | 20.98<br>(.947) | 21.50<br>(1.387) |
| Purchases of Medical Equipment and Supplies | 0.25<br>(.010) | 0.42<br>(.024) | 0.49<br>(.036) | 0.49<br>(.056) |

Table 3.1

Mean Use of Health Care Services per Person in All Families and Families with Out-of-Pocket Health Services Expense Exceeding 5.0, 10.0, and 20.0 Percent of Family Income. NMCES Household Data, 1977.

| Type of Service | Mean Number of Services Used per Person (Standard Error) | | | |
|---|---|---|---|---|
| | All Families | Families with Out-of-Pocket Expense Exceeding Specified Percentage of Family Income | | |
| | | 5.0 Percent or More | 10.0 Percent or More | 20.0 Percent or More |
| Hospital Admissions | 0.14 (.003) | 0.33 (.011) | 0.42 (.020) | 0.49 (.036) |
| Hospital Days | 1.03 (.030) | 2.72 (.116) | 3.87 (.238) | 4.97 (.469) |
| Ambulatory Physician Visits | 3.88 (.048) | 6.21 (.142) | 6.87 (.215) | 7.33 (.322) |
| Hospital Physician Visits | 0.25 (.006) | 0.58 (.022) | 0.75 (.041) | 0.91 (.070) |
| Dental Visits | 1.29 (.028) | 2.00 (.068) | 2.04 (.107) | 2.12 (.155) |
| Visits for Glasses or Lenses | .14 (.003) | .20 (.007) | .22 (.012) | .23 (.022) |
| Prescriptions | 4.21 (.097) | 7.63 (.265) | 8.66 (.439) | 9.26 (.634) |
| Purchases of Medical Equipment and Supplies | 0.09 (.004) | 0.16 (.010) | 0.20 (.015) | 0.21 (.024) |

Table 4.0

Total Annual Health Services Expenses Incurred by All Families and Families with Out-of-Pocket Expenses Exceeding 5.0, 10.0, and 20.0 Percent of Family Income. NMCES Household Data, 1977.

| Out-of-Pocket Expenses as Percent of Family Income | Number of Families | Percent of All Families in the Category (Standard Error) | Total Health Services Expenditures (in billions) | Percent of Total Expenditures Represented by Category (Standard Error) |
|---|---|---|---|---|
| 5.0 or more | 15,600,648 | 19.9 (0.45) | $44.0 | 41.9 (1.23) |
| 10.0 or more | 7,514,111 | 9.6 (0.31) | $26.6 | 25.3 (1.18) |
| 20.0 or more | 3,330,883 | 4.3 (0.20) | $14.0 | 13.3 (1.01) |
| All Families | 78,360,064 | 100.0 | $105.0 | 100.0 |

Table 4.1

Mean Annual Total Health Service Expenses for All Families and for Families with Out-of-Pocket Expenses Exceeding 5.0, 10.0, and 20.0 Percent of Family Income, by Type of Expense. NMCES Household Data, 1977.

| Type of Service | Mean Annual Expense (Standard Error) | | | |
|---|---|---|---|---|
| | All Families | Families with Out-of-Pocket Expense Exceeding Specified Percentage of Family Income | | |
| | | 5.0 Percent or More | 10.0 Percent or More | 20.0 Percent or More |
| Inpatient Hospital Services | $ 577.06 (20.04) | $1364.50 (70.41) | $1842.03 (125.88) | $2322.81 (239.70) |
| Inpatient Physician Services | $ 184.27 (6.11) | $ 449.15 (22.21) | $ 599.00 (40.80) | $ 703.34 (74.87) |
| Other Inpatient Services | $ 16.29 (1.47) | $ 35.74 (3.21) | $ 48.40 (5.94) | $ 61.51 (11.42) |
| Ambulatory Physician Services | $ 266.11 (4.74) | $ 413.77 (14.07) | $ 440.57 (25.29) | $ 447.57 (25.24) |
| Ambulatory Nonphysician Services | $ 45.66 (1.85) | $ 88.01 (6.82) | $ 108.66 (10.55) | $ 125.45 (16.19) |
| Dental Services | $ 147.42 (4.77) | $ 278.78 (14.37) | $ 286.06 (20.60) | $ 300.05 (30.06) |
| Eyeglasses or Contact Lenses | $ 20.80 (0.53) | $ 29.89 (1.40) | $ 30.56 (2.30) | $ 31.76 (4.40) |
| Prescribed Medicines | $ 70.31 (1.70) | $ 127.86 (4.14) | $ 137.17 (6.67) | $ 141.68 (9.70) |
| Medical Equipment and Supplies | $ 11.78 (0.98) | $ 33.09 (4.16) | $ 50.80 (8.63) | $ 68.88 (18.19) |
| All Services | $1339.71 (25.76) | $2820.79 (90.12) | $3539.23 (152.85) | $4203.06 (278.84) |

Table 4.2

Percent Distribution of Total Health Service Expenses by Type of Service, for All Families and for Families with Out-of-Pocket Expenses Exceeding 5.0, 10.0, and 20.0 Percent of Family Income. NMCES Household Data, 1977.

| Type of Service | Percent Distribution (Standard Error) | | | |
|---|---|---|---|---|
| | All Families | Families with Out-of-Pocket Expense Exceeding Specified Percentage of Family Income | | |
| | | 5.0 Percent or More | 10.0 Percent or More | 20.0 Percent or More |
| Inpatient Hospital Services | 43.1 (0.79) | 48.4 (1.16) | 52.0 (1.65) | 55.3 (2.52) |
| Inpatient Physician Services | 13.8 (0.35) | 15.9 (0.62) | 16.8 (0.93) | 16.7 (1.48) |
| Other Inpatient Services | 1.2 (0.10) | 1.3 (0.10) | 1.4 (0.16) | 1.5 (0.26) |
| Ambulatory Physician Services | 18.9 (0.39) | 14.7 (0.54) | 12.4 (0.77) | 10.6 (0.89) |
| Ambulatory Nonphysician Services | 3.4 (0.15) | 3.1 (0.24) | 3.1 (0.30) | 3.0 (0.38) |
| Dental Services | 11.0 (0.43) | 9.9 (0.59) | 8.1 (0.71) | 7.1 (0.87) |
| Eyeglasses or Contact Lenses | 1.6 (0.05) | 1.1 (0.06) | 0.9 (0.07) | 0.8 (0.12) |
| Prescribed Medicines | 5.2 (0.13) | 4.5 (0.19) | 3.9 (0.24) | 3.4 (0.32) |
| Medical Equipment and Supplies | 0.8 (0.07) | 1.2 (0.15) | 1.4 (0.25) | 1.6 (0.44) |
| All Services | 100.0 | 100.0 | 100.0 | 100.0 |

Table 4.3

Mean Annual Out-of-Pocket Health Service Expenses Incurred by All Families and by Families with Out-of-Pocket Expenses Exceeding 5.0, 10.0, and 20.0 Percent of Family Income, by Type of Expense. NMCES Household Data, 1977.

| Type of Service | Mean Annual Out-of-Pocket Expense (Standard Error) | | | |
|---|---|---|---|---|
| | All Families | Families with Out-of-Pocket Expense Exceeding Specified Percentage of Family Income | | |
| | | 5.0 Percent or More | 10.0 Percent or More | 20.0 Percent or More |
| Inpatient Hospital Services | $ 50.12 (3.80) | $ 215.61 (17.33) | $ 361.21 (34.01) | $ 586.93 (68.63) |
| Inpatient Physician Services | $ 40.31 (2.04) | $ 155.02 (8.34) | $ 232.96 (15.45) | $ 320.67 (28.72) |
| Other Inpatient Services | $ 4.17 (0.49) | $ 15.98 (2.44) | $ 24.46 (4.80) | $ 34.53 (9.67) |
| Ambulatory Physician Services | $112.87 (2.19) | $ 225.48 (6.54) | $ 240.15 (10.07) | $ 248.48 (15.04) |
| Ambulatory Nonphysician Services | $ 20.66 (1.34) | $ 51.14 (5.15) | $ 65.56 (9.11) | $ 76.68 (13.97) |
| Dental Services | $106.08 (3.48) | $ 233.65 (12.26) | $ 242.97 (18.11) | $ 252.90 (27.19) |
| Eyeglasses or Contact Lenses | $ 17.52 (0.46) | $ 26.50 (1.35) | $ 26.33 (2.14) | $ 28.91 (4.16) |
| Prescribed Medicines | $ 51.39 (1.28) | $ 108.08 (3.58) | $ 118.48 (5.95) | $ 124.64 (9.20) |
| Medical Equipment and Supplies | $ 8.80 (0.87) | $ 27.93 (3.92) | $ 43.17 (8.06) | $ 59.86 (17.22) |
| All Services | $411.92 (8.19) | $1059.39 (25.76) | $1355.88 (42.32) | $1733.59 (83.70) |

Table 4.4

Percent Distribution of All Families and Families with Out-of-Pocket Expenses for Health Services Exceeding 5.0, 10.0, and 20.0 Percent of Family Income, by Amount of Annual Out-of-Pocket Expenses. NMCES Household

| Total Annual Out-of-Pocket Expenses | Percent Distribution (Standard Error) | | | |
|---|---|---|---|---|
| | All Families | Families with Out-of-Pocket Expense Exceeding Specified Percentage of Family Income | | |
| | | 5.0 Percent or More | 10.0 Percent or More | 20.0 Percent or More |
| < $100 | 31.44<br>(0.59) | 3.11<br>(0.39) | 3.34<br>(0.54) | 2.85<br>(0.70) |
| $100-199 | 16.13<br>(0.31) | 6.56<br>(0.50) | 4.90<br>(0.62) | 5.32<br>(0.94) |
| $200-299 | 12.35<br>(0.33) | 8.82<br>(0.51) | 7.57<br>(0.66) | 8.18<br>(1.06) |
| $300-399 | 8.92<br>(0.29) | 8.32<br>(0.62) | 7.68<br>(0.89) | 5.61<br>(1.10) |
| $400-499 | 6.46<br>(0.21) | 7.21<br>(0.56) | 5.14<br>(0.67) | 4.56<br>(0.84) |
| $500-999 | 15.11<br>(0.39) | 29.09<br>(0.78) | 24.76<br>(1.07) | 19.88<br>(1.86) |
| $1000-1499 | 4.87<br>(0.20) | 16.18<br>(0.65) | 15.50<br>(0.90) | 13.14<br>(1.38) |
| $1500-1999 | 2.07<br>(0.13) | 8.74<br>(0.55) | 10.70<br>(0.86) | 10.32<br>(1.32) |
| $2000-2499 | 1.03<br>(0.11) | 4.31<br>(0.51) | 6.73<br>(0.87) | 8.16<br>(1.32) |
| $2500-2999 | 0.63<br>(0.07) | 2.92<br>(0.36) | 4.54<br>(0.64) | 6.84<br>(1.05) |
| $3000-3499 | 0.32<br>(0.05) | 1.46<br>(0.23) | 2.76<br>(0.49) | 3.55<br>(0.78) |
| $3500-3999 | 0.17<br>(0.04) | 0.81<br>(0.19) | 1.44<br>(0.32) | 2.11<br>(0.57) |
| ≥ $4000 | 0.51<br>(0.06) | 2.44<br>(0.31) | 4.89<br>(0.57) | 9.50<br>(1.21) |

Table 4.5

Percent Distribution of All Families and Families with Out-of-Pocket Expenses for Health Services Exceeding 5.0, 10.0, and 20.0 Percent of Family Income, by Levels of Total Annual Out-of-Pocket Expenses. NMCES Household Data, 1977.

| Total Annual Out-of-Pocket Expenses | Percent Distribution (Standard Error) | | | |
|---|---|---|---|---|
| | All Families | Families with Out-of-Pocket Expense Exceeding Specified Percentage of Family Income | | |
| | | 5.0 Percent or More | 10.0 Percent or More | 20.0 Percent or More |
| < $200 | 47.57<br>(0.67) | 9.67<br>(0.63) | 8.24<br>(0.83) | 8.17<br>(1.16) |
| < $500 | 75.30<br>(0.53) | 34.02<br>(0.85) | 28.63<br>(1.36) | 26.52<br>(1.82) |
| < $1000 | 90.41<br>(0.34) | 63.11<br>(1.04) | 53.39<br>(1.29) | 46.40<br>(2.03) |
| < $1500 | 95.28<br>(0.22) | 79.29<br>(0.87) | 68.89<br>(1.26) | 59.54<br>(2.32) |
| < $2000 | 97.35<br>(0.17) | 88.03<br>(0.81) | 79.59<br>(1.32) | 69.86<br>(2.20) |

Table 4.6

Mean Annual Out-of-Pocket Expense of Health Services, All Families and Families with Out-of-Pocket Expense Exceeding 5.0, 10.0, and 20.0 Percent of Family Income, by Income Categories. NMCES Household Data, 197

| Income Categories | Mean Annual Out-of-Pocket Expense (Standard Error) | | | |
|---|---|---|---|---|
| | All Families | Families with Out-of-Pocket Expense Exceeding Specified Percentage of Family Income | | |
| | | 5.0 Percent or More | 10.0 Percent or More | 20.0 Percent or More |
| Above Poverty Level | $434.28 (7.96) | $1,245.32 (28.61) | $1,834.35 (52.56) | $2,898.23 (137.68) |
| Below Poverty Level | $289.57 (22.93) | $ 655.24 (49.79) | $ 828.04 (63.76) | $1,136.35 (94.25) |
| All | $411.92 (8.19) | $1,059.39 (25.76) | $1,355.88 (42.32) | $1,733.59 (83.70) |

Table 4.7

Percent Distribution of Out-of-Pocket Health Service Expenses by Type of Service, for All Families and for Families with Out-of-Pocket Expenses Exceeding 5.0, 10.0, and 20.0 Percent of Family Income. NMCES Household Data, 1977.

| Type of Service | Percent Distribution (Standard Error) | | | |
|---|---|---|---|---|
| | All Families | Families with Out-of-Pocket Expense Exceeding Specified Percentage of Family Income | | |
| | | 5.0 Percent or More | 10.0 Percent or More | 20.0 Percent or More |
| Inpatient Hospital Services | 12.2 (0.78) | 20.4 (1.30) | 26.6 (1.94) | 33.9 (2.76) |
| Inpatient Physician Services | 9.8 (0.42) | 14.6 (0.67) | 17.2 (1.01) | 18.5 (1.46) |
| Other Inpatient Services | 1.0 (0.12) | 1.5 (0.24) | 1.8 (0.36) | 2.0 (0.57) |
| Ambulatory Physician Services | 27.4 (0.45) | 21.3 (0.63) | 17.7 (0.80) | 14.3 (1.02) |
| Ambulatory Nonphysician Services | 5.0 (0.31) | 4.8 (0.48) | 4.8 (0.67) | 4.4 (0.81) |
| Dental Services | 25.8 (0.73) | 22.1 (1.10) | 17.9 (1.32) | 14.6 (1.62) |
| Eyeglasses or Contact Lenses | 4.3 (0.13) | 2.5 (0.14) | 2.0 (0.17) | 1.7 (0.26) |
| Prescribed Medicines | 12.5 (0.32) | 10.2 (0.42) | 8.7 (0.50) | 7.2 (0.59) |
| Medical Equipment and Supplies | 2.1 (0.21) | 2.6 (0.37) | 3.2 (0.59) | 3.5 (0.97) |
| All Services | 100.0 | 100.0 | 100.0 | 100.0 |

Table 4.8

Percent of Total Health Service Expenses Paid Out-of-Pocket by All Families and by Families with Out-of-Pocket Expenses Exceeding 5.0, 10.0, and 20.0 Percent of Family Income, by Type of Expense. NMCES Household

| Type of Service | Percent of Total Health Service Expense Paid Out-of-Pocket (Standard Error) | | | |
|---|---|---|---|---|
| | All Families | Families with Out-of-Pocket Expense Exceeding Specified Percentage of Family Income | | |
| | | 5.0 Percent or More | 10.0 Percent or More | 20.0 Percent or More |
| Inpatient Hospital Services | 8.7 (0.65) | 15.8 (1.19) | 19.6 (1.80) | 25.3 (3.24) |
| Inpatient Physician Services | 21.9 (0.81) | 34.5 (1.41) | 39.2 (1.91) | 45.6 (3.23) |
| Other Inpatient Services | 25.6 (2.88) | 44.7 (4.06) | 50.5 (5.28) | 56.1 (7.56) |
| Ambulatory Physician Services | 42.4 (0.78) | 54.5 (1.52) | 54.5 (2.51) | 55.5 (2.16) |
| Ambulatory Nonphysician Services | 45.3 (1.96) | 58.1 (3.84) | 60.3 (4.34) | 61.1 (5.67) |
| Dental Services | 72.0 (0.99) | 83.8 (1.52) | 84.9 (2.00) | 84.3 (2.82) |
| Eyeglasses or Contact Lenses | 84.2 (1.03) | 88.7 (1.37) | 88.1 (2.00) | 91.0 (2.40) |
| Prescribed Medicines | 73.1 (0.90) | 84.5 (1.05) | 86.4 (0.95) | 88.0 (1.47) |
| Medical Equipment and Supplies | 74.7 (2.51) | 84.4 (3.28) | 85.0 (4.13) | 86.9 (4.88)* |
| All Services | 30.7 (0.65) | 37.6 (1.05) | 38.3 (1.43) | 41.2 (2.48) |

*The coefficient of variation of the denominator of this estimate is greater than 0.20. The variance approximation in this case is unreliable.

Table 5.0

Mean Annual Amount Paid for Health Services Used by All Families, by Source of Payment and by Type of Service. NMCES Household Data, 1977.

| Type of Expense | Mean Amount Paid, by Source of Payment (Standard Error) | | | | | |
|---|---|---|---|---|---|---|
| | Family | Private Insurance | Medicare | Medicaid | Other Payors | Unknown |
| Inpatient Hospital Services | $50.12 (3.80) | $251.25 (12.02) | $145.75 (10.94) | $63.72 (7.21) | $52.10 (5.32) | $14.13 (2.86) |
| Inpatient Physician Services | $40.31 (2.04) | $76.15 (3.23) | $29.23 (2.51) | $16.17 (2.03) | $19.74 (1.69) | $2.68 (0.52) |
| Other Inpatient Services | $4.17 (0.49) | $6.61 (1.16) | $1.45 (0.16) | $1.28 (0.21) | $2.45 (0.33) | $0.32 (0.08) |
| Ambulatory Physician Services | $112.87 (2.19) | $81.27 (2.41) | $19.61 (1.86) | $20.29 (1.61) | $24.68 (1.89) | $7.39 (0.66) |
| Ambulatory Nonphysician Services | $20.66 (1.34) | $9.35 (0.64) | $3.20 (0.52) | $3.14 (0.32) | $7.71 (0.91) | $1.61 (0.52) |
| Dental Services | $106.08 (3.48) | $26.74 (1.68) | $0.19 (0.05) | $3.65 (0.38) | $6.50 (0.99) | $4.28 (0.63) |
| Eyeglasses and Contact Lenses | $17.52 (0.46) | $1.62 (0.18) | $0.28 (0.05) | $0.85 (0.11) | $0.48 (0.07) | $0.06 (0.02) |
| Prescribed Medicines | $51.39 (1.28) | $9.57 (0.59) | -- -- | $5.37 (0.40) | $3.93 (0.40) | $0.05 (0.01) |
| Medical Equipment and Supplies | $8.80 (0.87) | $0.99 (0.14) | $0.96 (0.23) | $0.31 (0.07) | $0.71 (0.19) | $0.01 (0.01) |
| All Services | $411.92 (8.19) | $463.55 (15.70) | $200.65 (12.80) | $114.77 (10.20) | $118.31 (8.14) | $30.52 (3.44) |

Table 5.1

Mean Annual Amount Paid for Health Services Used by Families with Out-of-Pocket Health Service Expenses Exceeding 5.0 Percent of Family Income, by Type of Service. NMCES Household Data, 1977.

| Type of Expense | Mean Amount Paid, by Source of Payment (Standard Error) | | | | | |
|---|---|---|---|---|---|---|
| | Family | Private Insurance | Medicare | Medicaid | Other Payors | Unknown |
| Inpatient Hospital Services | $215.61 (17.33) | $490.99 (37.87) | $490.88 (44.87) | $58.46 (8.45) | $69.40 (13.36) | $39.08 (10.44) |
| Inpatient Physician Services | $155.02 (8.34) | $141.14 (10.22) | $91.85 (8.29) | $20.56 (5.89) | $32.68 (4.29) | $7.91 (2.31) |
| Other Inpatient Services | $15.98 (2.44) | $8.97 (1.25) | $4.81 (0.76) | $1.36 (0.45) | $3.84 (0.74) | $0.78 (0.26) |
| Ambulatory Physician Services | $225.48 (6.54) | $85.23 (5.05) | $49.24 (7.58) | $15.66 (2.09) | $22.09 (2.51) | $16.06 (2.68) |
| Ambulatory Nonphysician Services | $51.14 (5.15) | $11.04 (1.19) | $9.02 (2.01) | $2.89 (1.16) | $8.62 (1.30) | $5.31 (2.54) |
| Dental Services | $233.65 (12.26) | $26.10 (3.31) | $0.21 (0.13) | $3.04 (1.01) | $8.38 (3.30) | $7.40 (2.00) |
| Eyeglasses and Contact Lenses | $26.50 (1.35) | $1.27 (0.31) | $0.72 (0.18) | $0.75 (0.19) | $0.55 (0.14) | $0.09 (0.03) |
| Prescribed Medicines | $108.08 (3.58) | $10.57 (0.97) | -- -- | $5.21 (0.73) | $3.94 (0.67) | $0.06 (0.02) |
| Medical Equipment and Supplies | $27.83 (3.92) | $1.51 (0.41) | $2.66 (0.96) | $0.37 (0.21) | $0.58 (0.14) | $0.04 (0.04) |
| All Services | $1059.39 (25.76) | $776.82 (46.83) | $649.39 (50.83) | $108.30 (12.86) | $150.16 (16.68) | $76.74 (12.43) |

Table 5.2

Mean Annual Amount Paid for Health Services Used by Families with Out-of-Pocket Health Service Expenses Exceeding 10.0 Percent of Family Income, by Type of Service. NMCES Household Data, 1977.

| Type of Expense | Mean Amount Paid, by Source of Payment (Standard Error) | | | | | |
|---|---|---|---|---|---|---|
| | Family | Private Insurance | Medicare | Medicaid | Other Payors | Unknown |
| Inpatient Hospital Services | $361.21 (34.01) | $561.08 (70.14) | $736.26 (85.86) | $63.56 (13.70) | $65.33 (14.57) | $94.89 (15.61) |
| Inpatient Physician Services | $232.96 (15.45) | $155.60 (15.24) | $134.31 (15.59) | $26.38 (11.37) | $35.68 (6.02) | $10.07 (4.43) |
| Other Inpatient Services | $24.46 (4.80) | $10.97 (2.13) | $6.48 (1.02) | $1.33 (0.54) | $4.52 (1.34) | $0.63 (0.28) |
| Ambulatory Physician Services | $240.15 (10.07) | $76.07 (6.51) | $63.20 (15.28) | $16.38 (2.20) | $22.11 (3.61) | $22.04 (4.83) |
| Ambulatory Nonphysician Services | $65.56 (9.11) | $12.30 (1.98) | $13.62 (3.88) | $2.27 (1.00) | $10.16 (2.02) | $4.75 (1.50) |
| Dental Services | $242.97 (18.11) | $21.22 (4.37) | $0.40 (0.26) | $4.52 (1.98) | $5.20 (1.57) | $11.65 (3.98) |
| Eyeglasses and Contact Lenses | $26.93 (2.14) | $1.09 (0.34) | $1.06 (0.34) | $0.71 (0.26) | $0.66 (0.26) | $0.10 (0.09) |
| Prescribed Medicines | $118.48 (5.95) | $10.64 (1.16) | -- -- | $4.55 (0.64) | $3.43 (0.64) | $0.08 (0.04) |
| Medical Equipment and Supplies | $43.17 (8.06) | $2.62 (0.81) | $3.49 (1.92) | $0.52 (0.39) | $1.00 (0.28) | $0.00 (0.00) |
| All Services | $1355.88 (42.32) | $851.60 (79.76) | $958.83 (94.59) | $120.23 (22.72) | $148.19 (17.95) | $104.51 (17.71) |

Table 9.3

Mean Annual Amount Paid for Health Services Used By Families with Out-of-Pocket Health Service Expenses Exceeding 20.0 Percent of Family Income, by Type of Service. NMCES Household Data, 1977.

| Type of Expense | Mean Amount Paid, by Source of Payment (Standard Error) | | | | | |
|---|---|---|---|---|---|---|
| | Family | Private Insurance | Medicare | Medicaid | Other Payors | Unknown |
| Inpatient Hospital Services | $586.93 (68.63) | $999.20 (136.51) | $950.45 (162.99) | $54.60 (14.85) | $59.24 (22.07) | $76.39 (29.59) |
| Inpatient Physician Services | $320.67 (28.72) | $144.08 (23.85) | $147.85 (29.29) | $34.05 (23.64) | $39.33 (9.14) | $17.38 (8.84) |
| Other Inpatient Services | $34.53 (9.67) | $12.20 (3.90) | $5.91 (1.46) | $1.70 (1.02) | $6.04 (2.23) | $1.13 (0.56) |
| Ambulatory Physician Services | $248.48 (15.04) | $71.38 (8.87) | $48.83 (7.01) | $18.61 (3.85) | $23.76 (4.43) | $36.50 (9.61) |
| Ambulatory Nonphysician Services | $76.68 (13.97) | $12.94 (3.11) | $15.18 (5.13) | $2.65 (1.80) | $13.60 (3.97) | $4.80 (2.13) |
| Dental Services | $252.90 (27.19) | $20.63 (5.60) | $0.84 (0.64) | $6.69 (4.32) | $5.41 (1 60) | $13.60 (6.23) |
| Eyeglasses and Contact Lenses | $28.91 (4.16) | $0.11 (0.08) | $0.74 (0.39) | $0.93 (0.54) | $0.90 (0.36) | $0.17 (0.17) |
| Prescribed Medicines | $124.64 (9.20) | $9.17 (1.89) | -- -- | $3.95 (0.83) | $3.91 (1.13) | $0.01 (0.01) |
| Medical Equipment and Supplies | $59.86 (17.22) | $1.77 (0.99) | $5.01 (3.04) | $1.17 (0.88) | $1.08 (0.38) | $0.00 (0.00) |
| All Services | $1733.99 (83.70) | $967.08 (190.69) | $1174.80 (171.20) | $124.34 (35.86) | $153.27 (27.36) | $149.98 (35.49) |

Table 5.4

Percent Distribution of Amounts Paid for Health Services of All Families, by Source of Payment and by Type of Service. NMCES Household Data, 1977.

| Type of Expense | Percent Distribution by Type of Payment (Standard Error) | | | | | | |
|---|---|---|---|---|---|---|---|
| | Family | Private Insurance | Medicare | Medicaid | Other Payors | Unknown | All Payors |
| Inpatient Hospital Services | 8.7 (0.65) | 43.5 (1.58) | 25.3 (1.58) | 11.0 (1.19) | 9.0 (0.86) | 2.4 (0.47) | 100.0 |
| Inpatient Physician Services | 21.9 (0.81) | 41.3 (1.34) | 15.9 (1.12) | 8.8 (1.03) | 10.7 (0.96) | 1.5 (0.27) | 100.0 |
| Other Inpatient Services | 25.6 (2.88) | 40.6 (4.35) | 8.9 (1.17) | 7.9 (1.19) | 15.1 (2.02) | 2.0 (0.44) | 100.0 |
| Ambulatory Physician Services | 42.4 (0.78) | 30.5 (0.67) | 7.4 (0.66) | 7.6 (0.56) | 9.3 (0.71) | 2.8 (0.23) | 100.0 |
| Ambulatory Nonphysician Services | 45.3 (1.96) | 20.5 (1.39) | 7.0 (1.08) | 6.9 (0.68) | 16.9 (1.86) | 3.5 (1.14) | 100.0 |
| Dental Services | 72.0 (0.99) | 18.1 (0.88) | 0.1 (0.04) | 2.5 (0.26) | 4.4 (0.65) | 2.9 (0.41) | 100.0 |
| Eyeglasses and Contact Lenses | 84.2 (1.03) | 7.8 (0.79) | 1.3 (0.25) | 4.1 (0.53) | 2.3 (0.34) | 0.3 (0.08) | 100.0 |
| Prescribed Medicines | 73.1 (0.90) | 13.6 (0.67) | -- -- | 7.6 (0.54) | 5.6 (0.56) | 0.1 (0.01) | 100.0 |
| Medical Equipment and Supplies | 74.7 (2.51) | 8.4 (1.11) | 8.1 (1.94) | 2.6 (0.59) | 6.1 (1.66) | 0.1 (0.07) | 100.0 |
| All Services | 30.7 (0.65) | 34.6 (0.93) | 15.0 (0.85) | 8.6 (0.72) | 8.8 (0.60) | 2.3 (0.25) | 100.0 |

Table 5.5

Percent Distribution of Amounts Paid for Health Services of Families, with Out-of-Pocket Health Service Expenses Exceeding 5.0 Percent of Family Income, by Source of Payment and by Type of Service. NMCES Household Data, 1977.

| Type of Expense | Percent Distribution by Type of Payment (Standard Error) | | | | | | |
|---|---|---|---|---|---|---|---|
| | Family | Private Insurance | Medicare | Medicaid | Other Payors | Unknown | All Payors |
| Inpatient Hospital Services | 15.8 (1.19) | 36.0 (1.94) | 36.0 (2.50) | 4.3 (0.59) | 5.1 (0.99) | 2.9 (0.74) | 100.0 |
| Inpatient Physician Services | 34.5 (1.41) | 31.4 (1.67) | 20.4 (1.53) | 4.6 (1.22) | 7.3 (0.91) | 1.8 (0.49) | 100.0 |
| Other Inpatient Services | 44.7 (4.06) | 25.1 (3.10) | 13.5 (2.16) | 3.8 (1.22) | 10.7 (2.04) | 2.2 (0.71) | 100.0 |
| Ambulatory Physician Services | 54.5 (1.52) | 20.6 (1.04) | 11.9 (1.60) | 3.8 (0.49) | 5.3 (0.61) | 3.9 (0.58) | 100.0 |
| Ambulatory Nonphysician Services | 58.1 (3.84) | 12.5 (1.58) | 10.2 (2.18) | 3.3 (1.21) | 9.8 (1.44) | 6.0 (2.69) | 100.0 |
| Dental Services | 83.8 (1.52) | 9.4 (1.05) | 0.1 (0.05) | 1.1 (0.36) | 3.0 (1.15) | 2.7 (0.71) | 100.0 |
| Eyeglasses and Contact Lenses | 88.7 (1.37) | 4.3 (1.02) | 2.4 (0.61) | 2.5 (0.66) | 1.8 (0.46) | 0.3 (0.09) | 100.0 |
| Prescribed Medicines | 84.5 (1.05) | 8.3 (0.69) | -- -- | 4.1 (0.54) | 3.1 (0.51) | 0.0 (0.02) | 100.0 |
| Medical Equipment and Supplies | 84.4 (3.28) | 4.6 (1.25) | 8.0 (2.90) | 1.1 (0.55) | 1.8 (0.46) | 0.1 (0.12) | 100.0 |
| All Services | 37.6 (1.05) | 27.5 (1.23) | 23.0 (1.48) | 3.8 (0.42) | 5.3 (0.58) | 2.7 (0.41) | 100.0 |

Table 5.6

Percent Distribution of Amounts Paid for Health Services of Families with Out-of-Pocket Health Service Expenses Exceeding 10.0 Percent of Family Income, by Source of Payment and by Type of Service. NMCES Household Data, 1977.

| Type of Expense | Percent Distribution by Type of Payment (Standard Error) | | | | | | |
|---|---|---|---|---|---|---|---|
| | Family | Private Insurance | Medicare | Medicaid | Other Payors | Unknown | All Payors |
| Inpatient Hospital Services | 19.6 (1.80) | 30.5 (2.91) | 40.0 (3.44) | 3.5 (0.72) | 3.5 (0.79) | 3.0 (0.84) | 100.0 |
| Inpatient Physician Services | 39.2 (1.91) | 26.2 (1.80) | 22.6 (1.95) | 4.4 (1.78) | 6.0 (0.99) | 1.7 (0.73) | 100.0 |
| Other Inpatient Services | 50.5 (5.28) | 22.7 (3.88) | 13.4 (2.40) | 2.8 (1.13) | 9.3 (2.72) | 1.3 (0.58) | 100.0 |
| Ambulatory Physician Services | 54.5 (2.51) | 17.3 (1.32) | 14.3 (2.88) | 3.7 (0.51) | 5.0 (0.80) | 5.1 (0.95) | 100.0 |
| Ambulatory Nonphysician Services | 60.3 (4.34) | 11.3 (2.14) | 12.5 (3.37) | 2.1 (0.89) | 9.4 (1.73) | 4.4 (1.35) | 100.0 |
| Dental Services | 84.9 (2.00) | 7.4 (1.39) | 0.1 (0.09) | 1.6 (0.68) | 1.9 (0.56) | 4.1 (1.35) | 100.0 |
| Eyeglasses and Contact Lenses | 88.1 (2.00) | 3.6 (1.08) | 3.5 (1.08) | 2.3 (0.90) | 2.3 (0.79) | 0.3 (0.26) | 100.0 |
| Prescribed Medicines | 86.4 (0.95) | 7.8 (0.79) | -- -- | 3.3 (0.44) | 2.5 (0.44) | 0.1 (0.03) | 100.0 |
| Medical Equipment and Supplies | 85.0 (4.13) | 5.2 (1.66) | 6.8 (3.70) | 1.0 (0.68) | 2.0 (0.61) | 0.0 (0.00) | 100.0 |
| All Services | 38.3 (1.43) | 24.1 (1.74) | 27.1 (2.14) | 3.4 (0.60) | 4.2 (0.51) | 3.0 (0.48) | 100.0 |

Table 5.7

Percent Distribution of Amounts Paid for Health Services of Families with Out-of-Pocket Health Service Expenses Exceeding 20.0 Percent of Family Income, by Source of Payment and by Type of Service. NMCES Household Data, 1977.

| Type of Expense | Percent Distribution by Type of Payment (Standard Error) | | | | | | |
|---|---|---|---|---|---|---|---|
| | Family | Private Insurance | Medicare | Medicaid | Other Payors | Unknown | All Payors |
| Inpatient Hospital Services | 25.3 (3.24) | 25.6 (4.48) | 40.9 (5.05) | 2.4 (0.62) | 2.6 (0.97) | 3.3 (1.28) | 100.0 |
| Inpatient Physician Services | 45.6 (3.23) | 20.5 (2.28) | 21.0 (3.00) | 4.8 (3.13) | 5.6 (1.32) | 2.5 (1.27) | 100.0 |
| Other Inpatient Services | 56.1 (7.56) | 19.8 (5.52) | 9 6 (2.64) | 2.8 (1.69) | 9.8 (3.91) | 1.8 (0.94) | 100.0 |
| Ambulatory Physician Services | 55.5 (2.16) | 15.9 (1.75) | 10.8 (1.52) | 4.2 (0.83) | 5.3 (0.99) | 8.2 (1.91) | 100.0 |
| Ambulatory Nonphysician Serivces | 61.1 (5.67) | 10.0 (2.69) | 12.1 (3.92) | 2.1 (1.36) | 10.8 (3.08) | 3.8 (1.69) | 100.0 |
| Dental Services | 84.3 (2.82) | 6.9 (1.80) | 0.3 (0.21) | 2.2 (1.39) | 1.8 (0.56) | 4.5 (2.03) | 100.0 |
| Eyeglasses and Contact Lenses | 91.0 (2.40) | 0.4 (0.25) | 2.3 (1.22) | 2.9 (1.68) | 2.8 (1.03) | 0.5 (0.53) | 100.0 |
| Prescribed Medicines | 88.0 (1.47) | 6.5 (1.33) | -- -- | 2.8 (0.60) | 2.8 (0.77) | 0.0 (0.00) | 100.0 |
| Medical Equipment and Supplies | 86.9 (4.88)* | 2.6 (1.45)* | 7.3 (4.52)* | 1.7 (1.05)* | 1.6 (0.68) | 0.0 (0.00)* | 100.0 |

| Type of Expense | Percent Distribution by Type of Payment (Standard Error) | | | | | | |
|---|---|---|---|---|---|---|---|
| | Family | Private Insurance | Medicare | Medicaid | Other Payors | Unknown | All Payors |
| All Services | 41.2 (2.48) | 20.6 (2.84) | 28.0 (3.20) | 3.0 (0.80) | 3.6 (0.66) | 3.6 (0.83) | 100.0 |

*The coefficient of variation of the denominator of this estimate is greater than 0.20. The variance approximation in this case is unreliable

Table 5.8

Percent of Total and Out-of-Pocket Health Care Expenses Represented by Expenses for Inpatient Care Services, for All Families and for Families with Out-of-Pocket Expenses Exceeding 5.0, 10.0, and 20.0 Percent of Family Income. NMCES Household Data, 1977.

| | Percent (Standard Error) | | | |
|---|---|---|---|---|
| | All Families | Families with Out-of-Pocket Expense Exceeding Specified Percentage of Family Income | | |
| | | 5.0 Percent or More | 10.0 Percent or More | 20.0 Percent or More |
| Percent of Total Expense Represented by Inpatient Care Services | 58.0 (0.80) | 65.6 (1.09) | 70.2 (1.48) | 73.5 (1.98) |
| Percent of Out-of-Pocket Expense Represented by Inpatient Care Services | 23.0 (0.94) | 36.5 (1.40) | 45.6 (1.91) | 54.3 (2.49) |

## APPENDIX I. CALCULATION AND INTERPRETATION OF RELATIVE ERRORS OF ESTIMATES

The relative error of an estimate is given by the coefficient of variation (c.v.) of the estimate defined as the standard error of the estimate divided by the estimate itself. For example, the c.v. for the estimate of the percent of families with out-of-pocket health services expenditures less than 5.0 percent of family income (Table 1.0) is

$$\text{c.v.} = \frac{0.45}{79.5} = 0.0057$$

A c.v. of 0.0057 is considered quite small and the estimate a reliable one. On the other hand, the c.v. for the mean amount paid by private insurance for medical equipment and supplies for families having out-of-pocket health services expenses exceeding 20.0 percent of family income (Table 5.3) is

$$\text{c.v.} = \frac{0.99}{1.77} = 0.56$$

The reader should question the reliability of such an estimate. In fact, a 95 percent confidence interval for this estimate would include the value of zero. As a general rule of thumb, estimates are considered fairly reliable if the c.v. is less than 0.2. For c.v.'s greater than 0.3 the reader should use caution in interpreting the findings presented here. Appendix II describes in detail the method used to calculate the standard errors, the formation of confidence intervals, and the evaluation of differences between estimates.

## APPENDIX II. SAMPLING ERRORS

The statistics presented in this report are based on a sample of the U.S. civilian noninstitutionalized population and they will differ somewhat from the figures that would have been obtained from a complete census of the same population. Each possible sample provides a set of estimates and these estimates will vary from sample to sample. The variability among the estimates from all the possible samples which could have been selected is defined to be the standard error of the estimate or the sampling error. The chances are about 68 out of 100 that an estimate from the sample would differ from a complete census by less than the standard error. The chances are about 95 out of 100 that the difference would be less than twice the standard error and about 99 out of 100 that it would be less than 2 1/2 times as large.

For this report, standard errors were calculated for each estimate using a Taylor Series approximation, taking into account the complexity of the sample design. The quality of this variance approximation technique depends on having a reasonably small coefficient of variation of the denominator of the ratio mean (i.e., the x variable, generally a count of persons). As a rule of thumb, we aim for c.v.(x) <0.1 but 0.2 is tolerable (Kish, 1965). When the c.v.(x) is greater than 0.2, the variance approximation is considered unreliable. All such estimates of standard errors have been flagged in the tables presented here.

As discussed in Appendix I, the reader should also be aware of the relative standard error of the estimate itself. For estimates with c.v.'s greater than 0.2 but less than 0.3 caution should be taken when interpreting these findings.

For each estimate appearing in the tables the standrad error may be used to construct a confidence interval around the estimate. For example, a

95 percent confidence interval, for the percent of families with out-of-pocket health services expenditures exceeding 5.0 percent of family income, would be constructed as the estimated percent (i.e. 19.9%) plus or minus 1.96 times the estimated standard error (i.e. 0.45) or from 19.0% to 20.8%.

In addition to constructing confidence intervals for point estimates, the reader may want to compare subgroups of the population, constructing confidence intervals around these differences. This report deals with two types of subgroups. First, there are mutually exclusive subgroups such as one person families where the head of the fmaily was unemployed all year versus families with two or more persons where the head was unemployed all year. Second, there are subgroups contained within another subgroup such as families having out-of-pocket health services expenditures exceeding 10.0 percent of family income which are contained within the group of families having out of pocket health services expenditures exceeding 5.0 percent of family income. Confidence intervals for differences between these two types of subgroups have separate methods of calculation.

When considering mutually exclusive groups let $\hat{d} = \hat{\theta}_1 - \hat{\theta}_2$ denote the difference between the subgroups, where $\hat{\theta}_1$, and $\hat{\theta}_2$ are the estimates for the two subgroups. Returning to the example given in the preceeding paragraph, $\hat{\theta}_1 = 33.0\%$, $\hat{\theta}_2 = 18.7\%$ and $\hat{d} = 14.3\%$ (Table 2.11). The standard error of the difference is computed as

$$s_{\hat{d}} = \left[ s^2_{\hat{\theta}_1} + s^2_{\hat{\theta}_2} \right]^{1/2}$$

where $s^2_{\hat{\theta}_1}$ and $s^2_{\hat{\theta}_2}$ are the estimated sampling variances (i.e., the standard error squared) for $\hat{\theta}_1$ and $\hat{\theta}_2$, respectively. For our example

$$s_{\hat{d}} = \left[ (1.20)^2 + (0.57)^2 \right]^{1/2} = 1.33$$

A 95 percent confidence interval for this difference would then be 14.3 ± 1.96(1.33) or from 11.7% to 16.9%. From this one can conclude that there is a significant difference between the percent of unemployed heads in one person families and the percent of unemployed heads in families having two or more persons. This method assumes that the covariance between the two groups is zero or at least small and positive. In the latter case the variance estimate for the difference will be a slight overestimation.

To compare overlapping subgroups a different variance formula is required. Consider the difference between the mean out-of-pocket expenditure for ambulatory physician visits for families having out-of-pocket health services expenditures exceeding 5.0 percent of family income and families having out-of-pocket health services expenditures exceeding 10.0 percent of family income. (Table 4.3). Let $\hat{d} = \hat{\theta}_1 - \hat{\theta}_T$ where $\hat{\theta}_1$ is the subgroup estimate and $\hat{\theta}_T$ is the estimate for the <u>larger</u> group. The standard error of the difference is computed as

$$s_{\hat{d}} = 10.07 \left[ 1 - ( \hat{n}_1 / \hat{n}_T ) \right]^{1/2}$$

For our example, $\hat{d}$ = \$240.15 - \$225.48 = \$14.67 and

$$s_{\hat{d}} = 10.07 \left[ 1 - (7,514,111/15,600,648) \right]^{1/2}$$
$$= 7.25$$

A 95% confidence interval for this difference would then be \$14.67 ± 1.96(7.25) or from \$0.46 to \$28.88. Because the confidence interval does not include zero, one can conclude that there is a significant difference between the two groups. However, the difference may be very small and not of sub-

stantive interest. This method assumes a perfect correlation between the two groups and may be a slight overestimation due to the complexity of the sample design.